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Prevention

THE ASSOCIATION OF LDL CHOLESTEROL WITH CARDIOVASCULAR DISEASE MORTALITY IN A LOW-RISK POPULATION WITH TWO DECADES OF FOLLOW-UP: RESULTS FROM THE COOPER CENTER LONGITUDINAL STUDY

Poster Contributions
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Background: Although the association of LDL cholesterol (LDL-C) with cardiovascular disease (CVD) mortality is well established in intermediate and high risk populations, less is known in subjects with low CVD risk.

Methods: Fasting LDL-C was measured in participants of the Cooper Center Longitudinal Study, from 1978 and 1998, who were defined as low risk for 10-year CVD events based on Adult Treatment Panel III guidelines (0 or 1 major risk factors). The association of LDL-C categories with CVD mortality, ascertained from the National Death Index, was tested by Cox proportional hazards models.

Results: In 24,503 participants (69% men, median age 40) followed for a median of 19.3 years, 214 CVD deaths occurred. Compared with the reference group of LDL-C < 100 mg/dL, a significant association was seen between LDL-C groups 130-159.9 mg/dL, 160-189.9 mg/dL, and ≥ 190 mg/dL and CVD death (Table). After adjustment for sex, HDL-C, tobacco use, hypertension, and family history of coronary heart disease, the 2 highest LDL-C groups remained significantly associated. Of all subjects who died (n=902), the proportion of CVD deaths increased in a stepwise fashion from 12.3% in LDL-C <100 to 39.7% in the LDL-C >190mg/dl group.

Conclusion: In a low risk population with long term follow-up, LDL-C levels ≥ 130mg/dL in unadjusted analysis, and ≥ 160mg/dL in adjusted analysis, were associated with CVD risk. These findings underscore the importance of extending CVD risk prediction beyond the 10 year horizon in low risk individuals.

Hazard Ratios for CVD Mortality

LDL cholesterol (mg/dL)	n	Unadjusted HR [95% CI] for CVD Mortality	Adjusted HR [95% CI] for CVD Mortality
< 100	4983	Reference Group	Reference Group
100-129.9	8320	1.6 [0.9-2.7]	1.3 [0.8-2.3]
130-159.9	6750	1.8 [1.0-3.1]	1.4 [0.8-2.5]
160-189.9	3138	3.0 [1.7-5.3]	2.3 [1.3-4.1]
≥ 190	1393	2.6 [1.4-5.0]	2.0 [1.0-3.9]